

**PATENT**  
**Express Mail Label No. EV350855249US**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

First Named Applicant: Comaniciu  
Serial No.: To Be Assigned  
Filed: Herewith  
Title: System and Method for Vehicle Detection and  
Tracking

Docket No.: 2003P04385US01  
Examiner: To Be Assigned  
Group Art Unit: To Be Assigned  
Date: March 22, 2004

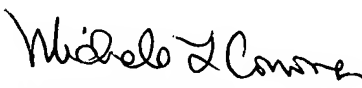
Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Sir:

The documents listed on the accompanying Form PTO-1449, and of which copies are enclosed, are hereby cited pursuant to 37 CFR §1.56, §1.97 and §1.98, for consideration in the examination of the above-identified application and for the purpose of having them made of record.

Respectfully submitted,



Michele L. Conover  
Reg. No.: 34,962

Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, NJ 08830  
(732) 321-3013

Form PTO - 1449		U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No. 2003P04385 US01		Serial No. To Be Assigned	
<b>INFORMATION CITED BY APPLICANT</b>  (Use several sheets if necessary)				Applicant Dorin Comaniciu			
				Filing Date Herewith		Group To Be Assigned	
U.S. Patent Documents							
Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if appropriate	
			Foreign Patent Documents				
	Document Number	Date	Country	Class	Subclass	Translation	
Other Prior Art (including Author, Title, Date, Pertinent Pages, etc.)							
	"Towards Active Machine-Vision Based Driver Assistance for Urban Areas", F. Heimes, Int. J. Computer Vision, 50(1):5-34, 2002.						
	"Obstacle Detection by Evaluation of Optical Flow Fields from Image Sequences", W. Enkelmann, Image and Vision Computing, 9(3):160-168, 1990.						
	"Real-Time Estimation and Tracking of Optical Flow Vectors for Obstacle Detection", Kruger et al., IVS'95, 304-309, 1995.						
	"Robust Obstacle Detection and Tracking by Motion Analysis", Willersinn et al., 1998.						
"	Moving object Recognition and Classification Based on Recursive Shape Parameter Estimation", D. Koller						
	"Real-time Vehicle Detection and Tracing from a Moving Vehicle", Betke et al., Machine Vision and Applications, 12: 69-83, 2000.						
	"Object Detection Using Model Based Prediction and Motion Parallax", Carlsson et al.						
	"Model-Based Object Tracking in Monocular Image Sequences of Road Traffic Scenes", Koller et al., Int. J. Computer Vision, 10(3): 257-281, 1993.						
	"Combination of Edge Elements and Optical Flow Estimates for 3D-Model-Based Vehicle Tracking in Traffic Image Sequences", Haag et al., Int. J. Computer Vision, 35(3) 295-319, 1999.						
	"Multiple Vehicle Detection and Tracking in Hard Real Time", Betke et al., Technical Report CS-TR-3667, Computer Vision Laboratory, University of Maryland, 1996.						
	"Robust Car Tracking Using Kalman Filtering and Bayesian Templates", Dellaert et al, ITS'97.						
Examiner				Date Considered			

Form PTO -- 1449		U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No. 2003P04385 US01		Serial No. To Be Assigned	
<b>INFORMATION CITED BY APPLICANT</b>  (Use several sheets if necessary)				Applicant Dorin Comaniciu			
				Filing Date Herewith		Group To Be Assigned	
U.S. Patent Documents							
Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if appropriate	
Foreign Patent Documents							
	Document Number	Date	Country	Class	Subclass	Translation	
Other Prior Art (including Author, Title, Date, Pertinent Pages, etc.)							
	"Overtaking Vehicle Detection Using Implicit Optical Flow", Batavia et al.						
	"Tracking Cars in Range Images Using the Condensation Algorithm", Meier et al.						
	"A Component-Based System for Car Detection" Thompson et al.						
	"Example-Based Object Detection in Images by Components", Mohan et al., IEEE Trans. PAMI, 23(4): 349-361, 2001.						
	"Rapid Object Detection Using a Boosted Cascade of Simple Features", Viola et al., CVPR 2001.						
	"Condensation -- Conditional Density Propagation for Visual Tracking <a href="http://www.robots.ox.ac.uk/~ab/abstracts/ijcv98.html">http://www.robots.ox.ac.uk/~ab/abstracts/ijcv98.html</a> , Int. J. Computer Vision, 29(1):5-28, 1998.						
	"Recovery of Ego-Motion by Region Registration", Irani et al.						
	"A Robust Method for Computing Vehicle Ego-motion", Stein et al.						
	"Multiple Plane Segmentation Using Optical Flow", Zucchelli et al, 313-322, BMVC 2002.						
Examiner				Date Considered			